U.S. Rural electrification administration.
Opportunity for graduate engineers in REA.

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OPPORTUNITY FOR GRADUATE ENGINEERS IN REA

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United States Department of Agriculture Rural Electrification Administration Washington

OPPORTUNITY FOR GRADUATE ENGINEERS IN REA
Internship Program for American and Latin-American Engineers

Opportunity to serve their government and at the same time lay the foundation of a career in the expanding field of rural electrification is offered engineering graduates in the internship training program of the Rural Electrification Administration, United States Department of Agriculture.

With the class of 1942-43, REA's interning program for junior bengineers goes into its seventh year for United States engineers, its essecond year for Latin-American engineers. In the class of 1941-42, 20 States and 8 Latin-American countries were represented.

The class of 1942-43 will commence the interning program after graduation in June, probably about June 16, 1942. All persons appointed to internships will receive pay at the rate of \$2,000 a year.

The program affords practical experience in the three principal branches of engineering — design, construction and operations — on REA systems in 45 states and territories on 400,000 miles of lines, representing allotments of \$420,000,000 to serve approximately 6,000,000 people. It affords day—to—day contact with engineers who are leaders in their respective fields. It affords opportunities to hear leading officials of the Department and of other Government agencies in a series of seminars, and to participate in lively group discussions. Finally, it prepares the young engineers for responsible positions in an

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agency that is carrying on what has been one of the most dynamic and fast-moving programs in or out of the Government. Of this program President Roosevelt has said:

"Provision of electricity to people in rural areas at a price they can afford to pay has long been one of my deepest interests, and I am gratified by the extent to which the Government's rural electrification program has progressed.

"As defense production tapers off it is likely that the electrification program may be stepped up sharply, for expanded activity in rural electrification promises to be one of our staunchest supports in the transition from a defense to a peacetime economy."

The internship program was started in 1936, when the first young engineers were accepted. So successful was the experience, both for the REA and for the interning engineers, that similar groups have been received each succeeding year. Young men of previous training classes now occupy responsible positions in all the principal parts of the REA.

### The REA in a Nutshell

The REA has two major tasks. The first is to enable unserved farm families and other rural consumers to get central station electric service on terms and at rates they can afford. The second is to get electricity used in quantities and for purposes to affect rural life materially.

The REA accomplishes the first of these tasks by making selfliquidating loans covering up to 100 percent of the cost of building distribution and transmission lines and, where necessary, generating plants. The law provides that loan applications from cooperatives, Conner that is carrying on what has been end of the nost dynamic sod

"Frevision of electricity to people in rurel areas at a price they entered to pay has long been one of my despect interests, and I am matiries by the extent to which the Government's wurel electrication progressed.

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public bodies and other non-profit organizations must receive preference.

Such bodies make up more than 90 percent of REA borrowers.

The second task of the REA is imposed by the need for repayment of the loans. Liberal use of electricity is vital to the financial success of an electric service system. Wise use is vital if an individual member is to continue to be a liberal user. Hence this task involves emphasis on productive uses of electricity, both on the farm and in the agricultural community. This emphasis is especially heavy during the present emergency.

As an officially designated National Defense Agency, the REA is geared closely to the needs of the National war effort. The agency is providing tools for more effective conduct of the Food for Freedom campaign. It is encouraging more widespread use of electrical appliances and equipment in producing, conserving and preserving the protein foods that will win the war and write the peace.

At the same time, the REA is supplying power to Army camps, Navy and Marine stations, flying fields, war industries, airway beacons, and many other war-time institutions. Existing REA systems serving more than two-thirds of the counties in the United States have been requested to increase their service facilities to provide for housing, filling stations, commercial establishments and recreational facilities in areas surrounding 92 military camps and war-industry projects financed by the United States Government.

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#### The Internship Program

From the day a young engineering graduate enters the REA internship program until he completes his training a year later, his work is carefully supervised. A specially designated official and assistants coordinate the program and act as counsellors. These counsellors are available constantly for consultation. They make sure that each interning engineer acquires experience sufficiently varied that, when he completes the program, he has a well-rounded conception of the REA and of the National Farm Program of which it is a part.

The internship program consists of seven main parts: (1) a friendly orientation to the REA; (2) regular office assignments to the principal divisions of the REA; (3) over-all REA seminars; (4) weekly night meetings for presentation and discussion of technical papers and talks by important public officials; (5) visits to factories where materials used in the REA program are manufactured; (6) assignments to REA systems for practical field experience; and (7) inspection trips in the vicinity of REA headquarters. In this program practice and theory go hand in hand, so that at the end of the period the interning engineers have a well-rounded practical understanding of all their duties.

#### Work of the Interning Engineers

For their assignments, the interning engineers are placed under the immediate supervision of the executives in the office concerned, where they are advised by a former interning engineer in that division.

A variety of duties are performed by them, depending upon the particular office, the work requirements therein, and the necessities of the REA program. They begin by performing elementary engineering work, such as

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making analysis of field reports and preparing accurate requirement estimates for potential systems. They assist in determining the feasibility of REA systems, and in checking maps and applications for accuracy. They check operating reports of systems and assist in preparing budgets. They may help in the solution of special technical operating problems. They check contracts and agreements for mathematical and engineering accuracy. They check construction details of transmission and distribution lines and make voltage regulation studies. Some assist in the design of wholesale and retail rate schedules. Others prepare statistical studies and reports and draft correspondence and memoranda covering conclusions and recommendations. They are required to perform any tasks that the work necessitates.

During his year of internship, each engineer rotates among the various Divisions — Applications and Loans, Design and Construction, Technical Standards, and Cooperatives Operations. In addition, he is given assignments with the Finance and Management Divisions, and with the Legal staff, so that he can become familiar with non-engineering aspects of the Federal rural electrification program.

#### Seminars

In order to acquaint the interning engineers with the over-all purposes of REA, there is offered a carefully designed series of Seminars which covers the background and development of the REA, its present functioning, and contemplated developments. Starting in with the Administrator and including all key officials and division heads, all significant aspects of the REA program are treated in these Seminars by a combination lecture and question-and-discussion method. The purpose

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is to develop a well-rounded conception of the REA. These Seminars occur during a good portion of the one-year period. Unless required otherwise, they are held two afternoons a week. Half of the time usually is devoted to presentation and the remainder to discussion and questions.

#### Weekly Night Meetings

In addition to seminars and office assignments, generally once a week, from 8 to 10 p.m., the young engineers meet to hear outside speakers or their own colleagues present talks or papers. The outside speakers include leading experts, in and out of the Government, who are working in fields either of intense general interest or of importance to the REA program. The interning engineers may themselves present papers on special problems with which they are familiar. In all these meetings, the time is about evenly divided between presentation and discussion.

#### Factory Assignments

During the year each graduate engineer spends two periods of two weeks each in factories of his own choosing. There he becomes familiar with the manufacture of materials used by REA systems. These factory assignments aim to provide experience in testing. This portion of the training may be curtailed or suspended during the war.

#### Field Assignments

Toward the close of the year, each interning engineer normally spends one month in the field, where he obtains practical experience in the construction and operation of REA systems. In this, as in other phases of the program, the interning engineer is given added

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responsibility as he gains experience and demonstrates ability, consistent always with the necessities of the REA program and the flow of work to be done.

#### Home-Life of the Interning Engineers

Confronted by the very real problem of living within their incomes, many of the interning engineers have banded together in houses which they operate cooperatively and at a very reasonable cost. Food is purchased wholesale.

One house has the very technical label, "Hysteresis Loop," and the other is known as "The Squirrel Cage." Administration is strictly democratic.

There are no formal house rules. The system works so well that, although the members at Hysteresis Loop are no longer interning, they still live at the house.

#### The Ultimate Goal

The object of the internship engineering program is to develop engineers who are not only professionally competent but also aware of the social and public aspects of their professional responsibilities. Six years' experience has shown that the program accomplishes this purpose. Members of previous classes have demonstrated their ability to make substantial contributions to rural electrification techniques.

Young engineers play a vital role in the REA. Furnishing opportunities for advancement is a regular part of the Administration's program. The REA offers a splendid opportunity to plan for a public engineering career.

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#### Civil Service Requirements

All appointments in REA must be made in accordance with civil service regulations. In order to determine eligibility for appointment as an interning engineer, it is suggested that the following procedure be followed:

- (1) Request the Personnel Division of REA to send you a blank application for employment and a copy of Civil Service Application Form 8.
- (2) Complete both forms and return them to the REA Personnel Division.

  Upon their receipt that division will forward Form 8 to the Civil Service

  Commission, Washington, D. C. for its inspection and approval.

  Applicants should indicate that they are applying for the position of

  Junior Engineer.

The examination is an unassembled one. Competitors are not required to appear for examination, their applications being sufficient to determine their eligibility.

Applications for the position of Junior Engineer may be submitted by senior engineering students at any time during their last semester but successful applicants cannot, of course, actually enter upon duty until proof of graduation is furnished. Graduation with a bachelors degree from a college or university of recognized standing is the only educational requirement for eligibility for appointment. No actual experience in the professional is required.

It is urged that all persons interested in being appointed as Junior Engineers initiate action at once; following the procedure above suggested. Opportunity to service your government and enter upon a career is before you right now; capitalize upon it.

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#### II. Latin-American Engineers

For the period beginning June 1941 and ending June 30, 1942 the REA admitted a group of promising young Latin-American engineers to its internship engineering program. This action was taken in cooperation with the Office of the President, the Coordinator of Inter-American Affairs, the Department of State, and the Office of Foreign Agricultural Relations, of the Department of Agriculture. Its purpose is to permit an exchange of knowledge and techniques in the field of rural electrification among the American Republics.

Eight engineers from as many Republics make up the first group of Latin-American engineers. Their ages range from 23 to 31, A larger group is expected during the year that begins on July 1, 1942. The permissible maximum is one engineer from each of the 20 American Republics south of the Rio Grande.

#### Qualifications \*

The following qualifications govern the selection of Latin-American engineers:

- 1. AGE. They must be between 22 and 30 years of age. This age will permit them to adjust themselves easily to the REA program, and to customs in the United States. Outstanding candidates just outside the age limits would not, however, be disqualified.
- 2. MARITAL STATUS. It is essential that candidates be single men.
- 3. LANGUAGE. A candidate should have a fair understanding of English.

  This does not mean that he must speak English fluently. The REA has on its staff several Spanish—speaking engineers who have done engineering work in Latin America.

<sup>\*</sup> For complete details see the application form and the medical blank required of each applicant.

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- 4. EDUCATION. The candidate should be a graduate of an established engineering school, with some work—preferably a major—in electrical engineering. Electrical, mechanical and civil engineers who comply with the foregoing are acceptable.
- 5. GENERAL. The candidate should have a genuine interest in rural electrification, a friendly, cooperative personality, and qualities of leadership that would enable him to assume a place in the electrical development of his country.

#### Program for Latin-American Engineers

The program for the Latin-American engineers follows that outlined for interning engineers from the United States and, in addition, covers every significant aspect of the REA program. Office assignments are so arranged that by the close of the period the interning engineers have a well-rounded conception of the entire REA program. All activities are directed toward enabling them to become capable of leadership in the rural electrification movement in their own countries.

In addition to sharing equally in all the activities of American interning engineers described previously, the Latin-American engineers hold meetings of their own. The first group of Latin-Americans has formed two important committees. One is the Spanish-American Word Committee, the function of which is to build up a technical electrical vocabulary in Spanish and English. The other committee is the REA Functional Committee, of which all the Latin-American engineers are members. At weekly meetings of this committee, the Latin-Americans analyze in detail all of the main functions in the various Divisions to which they have been assigned.

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The discussions of the REA Functional Committee are directed toward the preparation of a Spanish language document that will describe and explain all the principal functions of the REA.

#### Wide Latitude of Choice

After the Latin-American engineers have had an opportunity to gain an over-all familiarity with the work of the REA, they are given a wide latitude of choice of assignments. Thus each of them is able to specialize on the phase or phases of the REA program in which he sees the greatest potential benefits for his own country.

### Supervision and Guidance

The Latin-American engineers work under the same careful supervision as do the United States interning engineers. In order to make coordination of their work more effective, the official in charge of the internship program has an assistant who speaks Portuguese and Spanish. In addition, a number of high officials of the REA who have worked in various Latin-American countries are able to converse in Spanish.

## Work Requirements and Benefits

The regular office hours are 9:00 a.m. to 5:30 p.m. Thirty minutes is allowed for the lunch period. The office hours on Saturday are 9:00 a.m. to 1:00 p.m. The above hours are subject to seminar requirements and related activities that may necessitate other arrangements.

The REA provides an infirmary and a nurse for the treatment of simple ailments and injuries. Beyond that, Latin-American engineers are required to provide for their own health needs. An engineer may be absent from duty because of illness for as many as fifteen days during the year without deduction being made from his allowance.

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#### Allowances

The Latin-American engineers receive an allowance of \$150 a month which experience has shown is sufficient for living expenses. In addition, their travelling expenses between their countries and Washington are paid, both ways, by the United States Government.

When they are on assignments away from Washington, they receive an additional daily allowance and travelling expenses.

#### Cultural Opportunities

In the REA headquarters city, many of the Latin-American engineers live with the North American engineers in one of the cooperative houses described earlier. This arrangement affords splendid opportunities for members of the two groups to get acquainted with one another's traditions and culture.

In addition, the Latin-American engineers are extended every courtesy by municipal authorities, civic groups, other Federal agencies, and by the diplomatic and consular representatives of their homelands.

#### What the Latin-Americans Say

The Latin-American engineer trainees are enthusiastic about their work. They regard it as sound training, and they look forward to applying REA practices—administrative and technical—to problems in their own countries. The following statements of Latin-American engineers now with the REA reflect their attitudes toward the REA program.

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#### ARGENTINA ... FRANCISCO VILLAR MATTHIS -- Civil Engineer

"... we will understand intimately how so large an administration as REA is organized and managed, and how we can use the principles of mass production in the solution of rural electrification problems,"

CHILE ... ERNEST AYALA OLIVA — Civil Engineer with Special Studies in Electrical Engineering

"All the information on rural electrification I can obtain will be immediately useful to my country."

COLOMBIA ... HERNANDO MARTINEZ CARDENAS — Civil Engineer

"It certainly would be one of the biggest steps in the progress of Colombia to have a good rural electrification system."

GUATEMALA ... JUAN L. LIZARRALDE -- Civil Engineer

"As for promoting the good-neighbor policy, I can hardly imagine anything better than the opportunity of living together with young engineers from all three Americas."

HONDURAS ... BENJAMIN HERNANDEZ — Electrical Engineer

"I am happy to state that I am not only learning about electrical and administrative problems peculiar to rural electrification, but also about social and cultural problems."

MEXICO ... ANTONIO ELIZONDO -- Mechanical and Communications Engineer

"It may be said that the problems of rural electrification in Mexico may be solved along the same general principle adopted by REA."

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PERU ... MANUEL LOPEZ\_JIMENEZ -- Electrical Engineer with Special Studies in Civil Engineering

"I have always wanted to do some work for the benefit of my country.

In REA I can improve my knowledge of my profession and direct my activities toward rural electrification in Peru. Thus I can introduce many things which will be beneficial for my country."

URUGUAY ... LUIS ADOLFO CAGNO ROSSI - Industrial Engineer

"It is very interesting that this organization assists farmers only in so far as they need help, leaving them free as well as responsible for their own lives."

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